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ABSTRACT

Instructional management systems for use in monitoring student achievements in specified skill areas and the use of these data for compensatory education program evaluation are a relatively new phenomenon in the field of education. The replication of an instructional management system is reviewed in three settings: (1) a consortia of four middle-sized urban school districts (2) a desegregated middle-sized urban school district, and (3) a small centralized rural school district. Instructional management systems, as described by the three educational units reviewed here, implies individualization of instruction. The dissemination of the innovations and the impact of the strategies employed in the school districts involved are described. (Author)

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"Replication of an Educational Innovation; The Case of the Instructional Management System (The Middle Cities Consortia, Lansing, and Fennville Experiences)".

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Paper prepared for presentation at the annual meeting of the American Educational Research Association held April 4 to 8, 1977 in New York, New York.

"Replication of an Educational Innovation; The Case of the Instructional Management System (The Middle Cities Consortia, Lansing and Fennville Experiences)".

Instructional Management Systems* have been identified as one method of monitoring and assessing student progress in academic skill areas. In Michigan a number of school districts have begun to use Instructional Management Systems as an alternative to norm-referenced achievement tests for assessing and monitoring student achievement in skill areas.

This paper reviews the replication of the development of an Instructional Management System in three settings:

1) a consortia of four middle-sized urban school districts
2) a desegregated, middle-sized urban school district, and
3) a small centralized rural school district.

*For the purpose of this paper, Instructional Management Systems are defined as a set of performance objectives which represent a predetermined set of cognitive skills with lesson embedded pre and post assessment referenced to the objectives (Objective-Referenced Tests). The system also requires a record keeping system which aids in monitoring student progress in skill acquisition.

Middle Cities Consortia

The Middle Cities Consortia was formed January 1, 1973 as a cooperative effort of four Middle Cities Education Association school districts. The Middle Cities Consortia districts were Lansing, Grand Rapids, Pontiac, and Saginaw. The Middle Cities Education Association, the parent organization, consists of thirteen middle-sized urban school districts in Michigan.

The Middle Cities Consortia was charged with the task of developing an alternative assessment tool which would be useful to classroom teachers, as well as building level and central administrators and to report data on student achievement for target students of a state funded compensatory education program. The project received funds through the Elementary and Secondary Education Act, Title III, Section 306.

During the 1973-74 school year the Middle Cities project developed an instructional management system to address the needs in reading and mathematics at the K-6 grade skill level. Each of the four school districts submitted lists of objectives and corresponding assessments items. These lists were consolidated and edited. Perscriptive activities were developed by teachers in each of the consortia districts which could be used in teaching skills identified as especially difficult to master. The materials were field tested in classrooms in each of the four school districts.

During the 1974-75 school year all of the Middle Cities Instructional

Management System materials were field tested in Lansing elementary schools funded through ESEA Title I funds. The materials were further refined and edited. More than 2,000 teachers, administrators and parents were inserviced on the use of an instructional management system. Ten additional schools and programs within the Lansing School District used the Middle Cities Instructional Management System during the 1974-75 school year. Among the voluntary users were elementary schools, alternative education programs (which served students in grades 10-12) and junior high schools.

In the proposal for second year Title III funding (1974-75) the Middle Cities Project stressed the role of teacher and administrator inservice teams as a mechanism for turnkeying the educational product and management system process. While this was a stated priority, the concept did not materialize to the extent visualized.

LANSING SCHOOL DISTRICT

The Lansing School District is a middle sized urban school district with a student population of approximately 30,000 students. Lansing is a desegregated school district with a minority population of approximately 30%. Lansing receives approximately $6,000,000 in state and federal categorical funds. Among the categorically funded programs in Lansing are:

Emergency School Aid Act
ESEA, Title I
Chapter 3
ESEA, Title I Migrant
Michigan Department of Education Bilingual
ESEA, Title I, Pre-School
Gardening Project
Teacher Corps
Adult Basic Education
Alternative Education Program

With forty-seven elementary schools and nine secondary schools, the Lansing School District is decentralized and operates under a philosophy of responsible building autonomy. Responsible autonomy contends that educational decisions are best made at the level closest to the student; that is, at the program level. In order for this scheme to work data must be readily available to the decision-makers. Support must also be available for interpretation and identification of data and alternative strategies for meeting identified needs.

The Lansing School District began laying seeds for the development of its Instructional Management System beginning in 1971. Staff in Lansing were trained in methods of writing performance objectives. Each building was subsequently asked to prepare one performance objective related to one of

the school district goals. They were also asked to develop a pre-test, instructional unit and post-test referenced to the objective and then to implement these products utilizing a pre-test, teach, post-test model.

During the 1971-72 school year, Lansing elementary schools began to receive funds from the Chapter 3 program, a state funded compensatory education program. Involvement in this program created need on the part of school district staff to find a method of evaluating program success (as defined as student cognitive growth), by a means more sensitive to growth of low achieving students than norm-referenced instruments and with immediate utility to the classroom teacher in instructional planning.

Lansing teachers assisted in the development of objective-referenced test items to be used by the Michigan Department of Education in evaluating the kindergarten and first grade level student progress in the Chapter 3 program..

Lansing was a member of the Middle Cities Consortia and piloted the Middle Cities materials during the 1973-74 school year, summer school of 1974 and during the 1974-75 school year. These pilots were conducted with a limited number of Lansing teachers.

By the mid 1970's a number of schools had adopted or developed performance objectives and instructional management systems.

By the fall of 1975 a locally developed Lansing School District Instructional Management System (IMS) was distributed to all kindergarten through sixth grade teachers. The IMS built on the developments of the Middle Cities project, and commerically developed instructional management systems.

The IMS contains the following elements:

a. A listing of critical math and reading skills written in performance objective format.

b. Objective-referenced measurement instruments designed to assess (on a criterion referenced basis) student acquisition of specific math and reading objectives.

c. A record keeping system designed to merge all critical math and reading information transferred between teachers on a single card for each area. Record of student attainment of objectives is maintained on this card and transferred as students change classrooms, schools, or grade levels.

d. A data processing system which stores student IMS data and allows for comparisons between school year and special program achievement. Student objective achievement data is available in a format for teachers to share the information with parents during conferences or to send home with student report cards.

The IMS was developed locally by teams of teachers, and school district reading and math consultants, and staff from the Office of Evaluation Services.

The major state and federally funded projects in the district which served kindergarten through sixth grade students required that IMS data be maintained on each target student and that these data be submitted for inclusion in evaluation reports submitted to the funding agencies. The Office of Evaluation Services monitored, collected and analyzed these data. The Office of Elementary Education required that the IMS be used with each elementary student. Although these data were not required to be submitted to the the Office of Evaluation Services for analysis, it was required that records of individual students' progress be transferred to the receiving

school and teacher as students transferred schools or were promoted to other grade levels.

Revisions of the Instructional Management System

The IMS is not viewed as a static system. All components of the system are designed to be revised periodically to best meet the needs of Lansing students and teachers.

During the first year of district wide implementation the Office of Evaluation Services staff received informal and formal feedback on the IMS. During Spring of 1976, two panels were formed to review and revise the IMS (specifically test items, record keeping cards and testing procedures). The panels were made up of school district teachers. Members of the staff of the Office of Evaluation Services reviewed all objectives and test items for face validity, clarity of direction, and for racial, sexual, ethnic and cultural bias. The Program for Equal Opportunity at the University of Michigan in Ann Arbor conducted a second review of all objectives and test items for racial, sexual, ethnic and cultural bias. All items found to be biased were revised.

Revisions were also made to the IMS based on the recommendations of the two panels. Revisions were also made to items found to be not reliable (a reliability index of less than .5).

The Reliability of the IMS Tests

Item data was collected during the 1975-76 school year for all Title I students. These data were used to determine the reliability of IMS pre and post test items.

The Michigan Department of Education required that any tests with a reliability index of less than .5 be revised. Data on the reliability of the 1975-76 tests were used to revise all objectives below this minimum criteria. The tests proved to be reasonably reliable given the shortness of the tests and the fact that many of the items were new.

For reading:

32% of the tests had a reliability index of .8 or better.
61% of the tests had a reliability index between .5 and .8.
7% of the tests had a reliability index less than .5.

For math:

70% of the tests had a reliability index of .8 or better.
25% of the tests had a reliability index between .5 and .8.
5% of the tests had a reliability index of less than .5.

Problems and Solutions

When the use of the IMS was required of all elementary teachers in Lansing, several complaints were leveled by teachers at the IMS. The complaints came from individual teachers, building level administrators and through the teacher bargaining unit (The Lansing School's Education Association). The key issues seemed to be that:

1) Teachers did not feel that they were involved in the development of the system,
2) teachers felt that the system required too much time in testing and record keeping,
3) teachers felt that more inservice training and support should have been made available and,
4) that the system should have been phased in over a few year span.

School district staff responded to these criticisms in the following manner.

Formalize teacher input was provided for during the summer revision of the IMS conducted in 1976. Representative teachers from each grade level analyzed comments and recommendations by other teachers and modified the system to meet teacher and student needs. Modifications included a more stream lined testing model (teachers no longer have to pre-test every objective). Record keeping was modified to include provisions for recording re-teaching of objectives once mastered (but later demonstrated as in need).

During the 1976-77 school year teacher input was solicited through the grade level Steering Committee (an established on-going committee).

Inservice training has focused on meeting the needs of teachers as it relates to implementation of the IMS, individualization and methods of teaching reading and math.

FENNVILLE

Fennville is a small rural school district. Much of the economy centers around orchards. The only elementary and middle school are housed in one new large building. The high school is also part of the complex. There are eight-hundred (800) students in the elementary school with about thirty-two (32) teachers. There is a substantial migrant population and the school district receives Title I Migrant funds. The Migrant program operates as a pull-out program and there appears to be little coordination between the two programs. The Migrant summer program, which serves students from Fennville and nearby school districts, serves five-hundred (500) students. Fennville is about 40 miles from Grand Rapids and about 10-12 miles from Saugatuck (a resort town on Lake Michigan).

Initial Contact

Following a state-wide Chapter 3 conference held in Grand Rapids, the Principal of the Middle School in Fennville, Michigan wrote the Director of Evaluation Services in the Lansing School District, telling him that he had attended Lansing's presentation on the use of an Instructional Management System in evaluation of Lansing's Chapter 3 program. He asked for in-service training or other information on the adoption of Lansing's IMS.

Acting as consultants to Fennville, the Director of Evaluation Services and the author of this paper talked to the representative from Fennville and arranged that he and some other representatives from Fennville come to Lansing and view the IMS in operation.

Accompanying the Middle School Principal to Lansing were the principals of the elementary school, the curriculum coordinator and two teachers. The people from Fennville and consultants met and discussed the IMS in Lansing and Fennville's needs and expectations.

The Fennville representatives visited two classrooms, one first grade classroom and the reading center at a junior high school, both sites used the IMS.

The consultants then visited Fennville and discussed again Fennville's expectations and needs. We talked several times by phone and arranged a consulting schedule with the goal being that we assist in the adoption and development of an Instructional Management System to be used

with all students at the elementary level and which could be used as an evaluation instrument for Chapter 3 purposes. The Fennville representative originally wanted to have all materials ready to be implemented in the fall of 1976. Following discussions we came to the conclusion that given the political climate of the district a pilot should be planned for 1976-77 with implementation for Chapter 3 evaluation purposes in the fall of 1977.

During the first meetings and conversations with Fennville the teachers described an unfortunate experience in the district. Approximately five (5) years ago after reading a popular book on performance objectives, an administrator in Fennville required that all teachers turn in lesson plans in performance objective format to the Administrator to be shared among staff members. The following week after the required objectives (lesson plans) had been submitted and reviewed, teachers received their assignments with red marks crossing out words like "understand", "learn", "know", etc. The staff recounted this experience with much feeling although they said that they were over it. However in every session in which we met some reference to experience was made.

The summer workshop was arranged with one teacher per grade level. (There was no teacher representative chosen at the kindergarten level). The teacher representatives were chosen as identified "leaders" among other teachers (as identified by the curriculum coordinator). The curriculum coordinator managed the workshops. It was stated near the end of the summer that the teacher representatives were chosen because they were the most likely to be receptive to the management system.

We decided to include a Lansing teacher as part of the consulting team. The teacher, who does not like Lansing's IMS, but does like

the use of objectives, served to balance the team and help give a teachers' classroom perspective. Following the bad experience with objectives, we had decided to go easy on structure.

We began the first sessions by giving a general overview of our experience and of our purpose in Fennville. We then helped them develop goals and objectives for the summer workshop.

Prior to our coming to Fennville, teachers at each grade level developed lists of minimal math and reading performance expectations. Sessions were designed to mix presentations of how to go about developing an instructional management system with work sessions (actually doing the developing). Rather than provide all of the answers (i.e., "The ten easy steps of developing a management system"), the consultants helped the Fennville representatives to identify needs and to decide upon what product they felt would address the needs. The committee made all of the decisions about what the system would be. The consultants served as technical support. The consultants met with the committee two to three days a week for approximately six weeks. The Fennville committee met five days a week completing tasks when the consultants were not in town.

The consultants found the issue of instilling ownership on the part of Fennville teachers for the management system to be a key element to it's success. The committee was encouraged to talk about what they were doing with other staff members and to solicit feedback, thereby letting other teachers know exactly who was responsible for developing the system. The consultants attempted to have the committee "re-invent" the wheel when possible so that the products would be unique to Fennville.

Much time was spent cautioning the committee that the system was not a finished product and that the products were not to be viewed as static. As the materials were to be used and piloted, the committee should solicit feedback from the users and based on the feedback, establish committees of teachers to revise the system.

The committee was uneasy about feeling that they would not be able to answer all of the questions which the staff would have. Again, the consultants spent much time establishing the idea that the committee would not have all the answers. The committee would have to take a similar tact in working with teachers as the consultants had taken in working with the committee, that is, to aid in the formation of questions and identification of needs and then to help the teacher discover his or her own answers. Simulations in active and passive listening techniques were conducted with the committee.

The committee was also encouraged to build as many alternatives into the system as was practical. For instance, two record keeping systems were developed for use with the system thereby accommodating needs of teachers who wanted to maintain only individual records of student progress, and another for teachers who also wanted a classroom matrix of student progress.

One strategy which helped the committee to view the task and to plan for the needs of the entire school was provision for a classroom teacher to be part of the consulting team. The teacher used Lansing's IMS in her classroom and was able to offer ideas of various methods of implementing the system and the amount of teacher and student time the system required as well as estimates of the amount of paper the system

would consume.

Conflicting view points about the utility and role of instructional management systems were also presented (often by the classroom teacher on the consulting team). By hearing the negative side or drawbacks to a management system, the committee was able to reflect on these concerns and to develop a system which alleviated the concerns which they felt were valid. This process was also beneficial for the Lansing teacher involved in consulting team in that she was receiving recognition for her skills as a teacher and she was able to be involved in a development of an instructional management system by teachers and finding that the product was similar to the instructional management system developed in Lansing.

A final strategy which proved to be useful was for the committee to discuss, articulate and document its' priorities, philosophy toward education, testing and individualization and to develop a documented rationale for these priorities. This strategy was to prove invaluable as the committee communicated its work and products to the school staff.

WHERE ARE THEY NOW?

A number of small school districts have adopted or adapted the Middle Cities Project Instructional Management System. The four Middle Cities project districts used the products of the Middle Cities project as a spring board for developing their own local school district management systems.

The Lansing Instructional Management System is being refined and mechanisms have been established for obtaining more direct teacher input

into the revision of the system. A secondary level (grades 7-12) management system is being developed under the title of "Life Role Competencies" (to disassociate it from the negative reactions encountered by the elementary level instructional management system). Building on the lessons learned implementing the elementary IMS, the secondary system is being developed by identifiable teacher groups and is being phased into the secondary schools over a three year period.

The Fennville materials are being piloted by teachers who volunteer to participate. Fennville is currently addressing the issue of the use of testing and measures of student preformance for the purpose of evaluating teachers.

For more information about the development and use of Lansing's Instructional Management System see;

"Individualization, Desegregation and Educational Decision-Making in an Urban, Decentralized School System", by Grace Iverson, Thomas Koenig and Helen Sarvis; April 1977. Presented at the American Educational Research Association Annual Meeting held April 4-8, 1977, New York, New York.

"An Evaluation of Elementary Categorical Programs 1975-76" prepared by, The Office of Evaluation Services, September 24, 1976, Lansing, Michigan.